

IN THE CLAIMS:

Please cancel claims 4, 6, 17 and 19-23 without prejudice, amend claims 3, 5, 7-9, 16, 18, 24, 30, 36 and 37 and add new claims 38-43 as follows:

1-2. (Cancelled)

3. (Currently amended) A hand-off processing apparatus for a down-link telecommunication system, the apparatus comprising:

a first coder for coding an input bit stream and outputting a coded bit stream;

an interleaver for interleaving the input bit stream and outputting an interleaved bit stream;

a second coder for coding the interleaved bit stream from the interleaver and outputting an interleaved coded bit stream;

first and second rate matching algorithm processing units for receiving the coded bit stream and interleaved coded bit stream and for generating rate matched bit streams having different patterns by using first and second rate matching algorithms, respectively; and

first and second multiplexers for outputting the rate matched bit streams generated by the first and the second rate matching algorithm processing units,

wherein the initial offset value of the first rate matching algorithm processing unit is different from the initial offset value of the second rate matching algorithm processing unit.

4. (Canceled)

5. (Currently amended) A hand-off processing apparatus for a mobile communication system, comprising:

a first coder for coding an input bit stream and outputting a first coded bit stream;

a second coder for coding an input bit stream and outputting a second coded bit stream;

a first rate matching algorithm processing unit for receiving the first coded bit stream, performing rate matching, and generating a first rate matched bit stream;

a second rate matching algorithm processing unit for receiving the second

coded bit stream, performing rate matching, and generating a second rate matched bit stream;  
and

first and second multiplexers for outputting the first and the second rate matched bit streams,

wherein the initial offset value of the first rate matching algorithm processing unit is different from the initial offset value of the second rate matching algorithm processing unit.

6. (Canceled)

7. (Currently amended) A mobile terminal receiver of a telecommunication system, the mobile terminal receiver comprising:

a deplexer for receiving and deplexing a radio frequency signal transmitted from two base stations;

an analog receiver for receiving the deplexed signal from the deplexer, converting the deplexed signal to an intermediate frequency signal and amplifying the intermediate frequency signal;

a searching unit for continuously searching pilot signals transmitted from the two base stations from among the signals received from the analog receiver and computing a signal-to-interference ratio of each pilot signal;

a base station controller for determining from which base station the signal searched by the searching unit was transmitted by using the computed signal-to-interference ratio;

a plurality of rake receivers for providing the signals transmitted from the two base stations to a code combiner according to the determination of the base station controller;

a code combiner for converting the signals from the two base stations into a plurality of kinds of data streams ~~and~~; and

a repeating decoder for receiving, decoding and outputting the plurality of kinds of data streams as a single data stream,

wherein the code combiner comprises:

a first demultiplexer for classifying the signals transmitted from a first rake receiver by kinds;

a second demultiplexer for classifying the signals from a second rake receiver by kinds;  
a deinterleaver for deinterleaving and restoring the signals from the second demultiplexer to their original signals;  
a first combiner for classifying signals from the deinterleaver and from the first demultiplexer into a single kind of signal; and  
a second combiner for receiving and classifying by kinds a predetermined signal from the first demultiplexer and a predetermined signal from the second demultiplexer.

8. (Currently amended) The mobile terminal receiver of claim 7, wherein the code combiner comprises:

a first demultiplexer for classifying and outputting the signals transmitted from a first rake receiver by kinds;

a second demultiplexer for classifying and outputting the signals transmitted from a second rake receiver by kinds;

a deinterleaver for deinterleaving and restoring at least some of the signals from the second demultiplexer to their original signals;

a first combiner for classifying the signals from the deinterleaver and at least some of the kinds of signals from the first demultiplexer into a single kind of signal; and

a second combiner for receiving and classifying by kinds signals from the first demultiplexer other than the signals received by the first combiner from the first demultiplexer and signals from the second multiplexer other than the signals received by the deinterleaver from the second demultiplexer.

9. (Currently amended) The mobile terminal receiver of claim 7, wherein the code combiner comprises:

a first demultiplexer for classifying the signals from a first rake receiver by kinds;

a second demultiplexer for classifying the signals from a second rake receiver by kinds;

a first combiner for classifying signals from the second demultiplexer into a single kind of signal; and

a second combiner for receiving and classifying by kinds signals from the first ~~demultiplexer demultiplexer~~ other than the signals received by the first combiner from the first

demultiplexer and signals from the second demultiplexer other than the signals received by the first combiner from the second demultiplexer.

10. (Previously presented) The mobile terminal receiver of claim 7, wherein the code combiner comprises:

- a first demultiplexer for classifying the signals from a first rake receiver by kinds;
- a second demultiplexer for classifying the signals from a second rake receiver by kinds;
- a first combiner for classifying signals from the second demultiplexer into a single kind of signal; and

- a second combiner for receiving and classifying by kinds a predetermined signal from the first demultiplexer and a predetermined signal from the second demultiplexer.

11. (Canceled)

12. (Previously presented) The mobile terminal receiver of claim 7, wherein the code combiner converts the signal from the two base stations to a first, second and third kind of data stream and the repeating decoder comprises:

- a first decoder for receiving and decoding the first and second data streams from the code combiner;

- a first interleaver for receiving and interleaving the decoded data stream from the first decoder;

- a second interleaver for receiving and interleaving the first and second data streams from the code combiner; and

- a second decoder for receiving and decoding the data streams from the first and the second interleavers and the third data stream from the code combiner to generate a single data stream.

13. (Previously presented) The mobile terminal receiver of claim 12, wherein the repeating decoder further comprises a deinterleaver for deinterleaving the data stream from the second decoder and inputting the deinterleaved data stream to the first decoder.

14-15. (Cancelled)

16. (Currently amended) A hand-off processing method for a mobile communication system, the method comprising:

coding an input bit stream to generate a coded bit stream;

interleaving the input bit stream to generate an interleaved bit stream;

coding the interleaved bit stream to generate an interleaved coded bit stream;

performing rate matching by using different patterns for the coded bit stream and the interleaved coded bit stream to generate first and second rate matched bit streams, the rate matching performed with different initial offset values for the coded bit stream and the interleaved coded bit stream; and

outputting the first and second rate matched bit streams.

17. (Canceled)

18. (Currently amended) The method of claim 16, wherein, the first and second coded bit streams are rate-matched such that initial offset values are one of 2 and 1 and 1 and 2.

19-23. (Cancelled)

24. (Currently amended) A hand off processing apparatus for a mobile communication system, comprising:

a coder adapted to code an input bit stream during handoff such that a first coded bit stream and a second coded bit stream are generated, the first coded bit stream different from the second coded bit stream and wherein the coder is further adapted to generate the first coded bit stream using a first pattern for rate matching first intermediate coded input bit stream bits (X), ~~first intermediate interleaved-coded input bit stream bits (X')~~, second intermediate coded input bit stream bits (Y), and second intermediate interleaved-coded input bit stream bits (Z) and to generate the second coded bit stream using a second pattern for rate matching ~~first intermediate coded input bit stream bits (X)~~, first intermediate interleaved-coded input bit stream bits (X'),

second intermediate coded input bit stream bits ~~(Y)~~(Y'), and second intermediate interleaved-coded input bit stream bits ~~(Z)~~(Z'); and

a transmitter adapted to transmit one of the first coded bit stream and the second coded bit stream to a mobile station.

25. (Previously presented) The hand off processing apparatus of claim 24, wherein the first pattern and the second pattern are different.

26. (Previously presented) The hand off processing apparatus of claim 24, wherein the first pattern and the second pattern are each determined by using initial values.

27. (Previously presented) The hand off processing apparatus of claim 24, wherein the first pattern is determined by using different initial values to determine puncturing position.

28. (Previously presented) The hand off processing apparatus of claim 24, wherein the second pattern is determined by using different initial values to determine puncturing position.

29. (Previously presented) The hand off processing apparatus of claim 24, wherein the coder further comprises:

a code generator adapted to generate a base station code identifying for which of a plurality of base stations each of the first coded bit stream and the second coded bit stream is intended; and

a multiplier adapted to multiply each of the first coded bit stream and the second coded bit stream by the corresponding base station code.

30. (Currently amended) A method for performing hand off in a mobile communication system, the method comprising:

coding an input bit stream and generating a first coded bit stream and a second coded bit stream, the first coded bit stream different from the second coded bit stream and wherein the first coded bit stream is generated using a first pattern to rate match first ~~intermediate-coded~~ input bit stream bits (X), ~~first intermediate interleaved-coded input bit stream bits (X')~~, second

~~intermediate-coded input bit stream bits (Y), and second-first intermediate-interleaved-coded input bit stream bits (Z) and the second coded bit stream is generated using a second pattern to rate match first-intermediate-coded input bit stream bits (X), first-intermediate-second interleaved-coded input bit stream bits (X'), the second intermediate-coded input bit stream bits (Y), and second-intermediate-the first interleaved-coded input bit stream bits (Z); and~~  
transmitting one of the first coded bit stream and the second coded bit stream to a mobile station.

31. (Previously presented) The method of claim 30, wherein the first pattern and the second pattern are different.

32. (Previously presented) The method of claim 30, further comprising determining the first pattern and the second pattern by using initial values.

33. (Previously presented) The method of claim 30, further comprising determining the first pattern by using different initial values to determine puncturing position.

34. (Previously presented) The method of claim 30, further comprising determining the second pattern by using different initial values to determine puncturing position.

35. (Previously presented) A mobile terminal receiver of a telecommunication system, the mobile terminal receiver comprising:

a code combiner for combining a first base station signal and a second base station signal and providing a combined output; and

A decoder for decoding the combined output;

wherein the combiner comprises:

a first demultiplexer for demultiplexing the first base station signal;

a second demultiplexer for demultiplexing the second base station signal;

a deinterleaver for deinterleaving a predetermined output of the second demultiplexer;

a first combiner for combining an output of the deinterleaver and a predetermined output of the first demultiplexer; and

a second combiner for combining an output of the first demultiplexer other than the predetermined output of the first demultiplexer and an output of the second demultiplexer other than the predetermined output of the second demultiplexer.

36. (Currently amended) A hand-off processing apparatus for a mobile communication system, comprising:

- a first coder for coding an input bit stream and outputting a first coded bit stream;
- a second coder for coding an input bit stream and outputting a second coded bit stream;
- a first rate matching algorithm processing unit for receiving the first coded bit stream, performing rate matching, and generating a first rate matched bit stream;
- a second rate matching algorithm processing unit for receiving the second coded bit stream, performing rate matching, and generating a second rate matched bit stream; and
- first and second multiplexers for outputting only the first and the second rate matched bit streams;

~~wherein the first and the second rate matching algorithm processing units have different initial offset values.~~

37. (Currently amended) A hand-off processing method for a mobile communication system, the method comprising:

- coding an input bit stream to generate a coded bit stream;
- interleaving the input bit stream to generate an interleaved bit stream;
- coding the interleaved bit stream to generate an interleaved coded bit stream;
- performing rate matching by using different patterns for the coded bit stream and the interleaved coded bit stream to generate first and second rate matched bit streams; and
- outputting only the first and second rate matched bit streams;

~~wherein rate matching is performed with different initial offset values.~~

38. (New) The apparatus of claim 36, wherein the first and second rate matching algorithm processing units have different initial offset values.



39. (New) The apparatus of claim 36, wherein the second rate matching algorithm processing unit is adapted to perform rate matching on an interleaved input bit stream.

40. (New) The apparatus of claim 37, wherein the first and second rate matching algorithm processing units have different initial offset values.

41. (New) The method of claim 37, wherein the second rate matched bit stream comprises a second rate matched interleaved coded bit stream (X').

42. (New) The apparatus of claim 3, wherein the first rate matching algorithm processing unit and the second rate matching algorithm processing unit use the same algorithm.

43. (New) The apparatus of claim 5, wherein the first rate matching algorithm processing unit and the second rate matching algorithm processing unit use the same algorithm.